

SUMMERS (J.E.) *je*

The Indications for Amputation in
Chronic Disease of the Larger
Bones and Joints with a Report
of Seventeen Recent Cases,
including Three Success-
ful Amputations at
the Hip Joint.

by

J. E. SUMMERS, Jr., M. D.,

OMAHA, NEB.

Professor of Principles and Practice of Surgery and Clinical
Surgery, Omaha Medical College. Surgeon to the
Clarkson Memorial, Immanuel and Doug-
las County Hospitals, Omaha.

Reprint from THE OMAHA CLINIC, July, 1893.

THE INDICATIONS FOR AMPUTATION IN CHRONIC
DISEASE OF THE LARGER BONES AND JOINTS
WITH A REPORT OF SEVENTEEN RECENT
CASES, INCLUDING THREE SUCCESS-
FUL AMPUTATIONS AT THE
HIP-JOINT.

By J. E. SUMMERS, JR., M. D.

Professor of Principles and Practice of Surgery and Clinical Surgery, Omaha Medical College. Surgeon to the Clarkson Memorial, Immanuel and Douglas County Hospitals, Omaha, Nebraska.

I find that it is often a perplexing question to decide when it is in the interest of the patient to abandon all consideration and practice of commonly designated conservative measures—including orthopædic apparatus, incision and drainage, the use of the scissors, sharp spoon, chisel, excision, etc.—in diseases of the large joints, and resort to amputation. I believe it is a lack of appreciation of this period which is responsible for many deaths in such cases where amputation is not resorted to, or if at all, only as a last and useless resort.

In the November, 1889 No. of the OMAHA CLINIC in considering "Amputation in Lesions of the Knee-joint," I wrote:

"When, however, the subject is one of disease, and not of injury, amputation

should be the last thought of and much-to-be-fought alternative. All forms of knee joint disease (except Charcot's and osteoarthritis) can usually be successfully managed on the principle of rest, or rest with extension—some require aspiration, or incision and drainage. Usually this practice is followed by good results, but when it fails, and disorganization more or less complete, has come about, some other form of operative practice is demanded. Space does not permit a review of the whole field of diseases of the knee joint coming within this category, so we will briefly confine our views to one, by far the most common, tuberculosis.

“No attempt at a typical resection should be made in children under ten years of age, as it has been found by experience that even where the epiphyseal cartilage of the femur was not injured by the surgeon, although the operation was at first apparently a brilliant success, yet time proved that the limb did not grow with its fellow, and great deformity frequently followed. Koenig and Kocher have had many experiences of this kind, and the latter tells of one case of a six year old child whose knee joint he resected without injury to the epiphyseal cartilage: for one and one-half years the shortening was $2-3\frac{1}{2}$ cmtrs., later it increased to 9 cmtrs.

“In all cases, even up to and including twelve years of age, when conservative methods fail, it is best both as regards danger to life, and the prospect of cure with a serviceable limb, to confine operative measures to the use of the knife, sharp

spoon and scissors for the removal of diseased tissues, remembering that nature in about 33 per cent. of these knee-joint lesions brings about a cure, which, we, by our operation, merely aim to shorten.

“From twelve to twenty years of age is the time most favorable for resection. It is the period which experience has proven gives the best results, curative and functional. After thirty years of age resection commences to show bad results, and after middle life should never be performed.

“Amputation should be done in extensive disease after failure of the partial operation; and in all cases when there is indication of the tuberculous process having invaded internal organs, provided of course this has not progressed too far.

“Amputation should always be performed in patients past middle life, when it is a question of any operation, and when the local lesion at any age has so sapped the vitality of the subject that repair is impossible. The removal of the limb in such cases is the highest conservatism.”

These remarks are, in the main, in my judgment, sound to-day, and apply to all the large joints of the lower extremity, with the exception perhaps of the later period in life when, in carefully selected cases, excision may successfully be performed upon the knee-joint. Amputation in disease of the bones and joints of the upper extremity must only very exceptionally be justifiable, yet I have seen such cases; one being in the clinic of Billroth. Sarcoma of the bones and joints of the extremities can only be treated with any

prospect of success by early amputation—Carcinoma of bone as a primary lesion has never been satisfactorily demonstrated to my mind. I have been led in the last two or three years of my practice more and more in favor of amputation as a conservative practice in extensive, long continued tubercular osteo-myelitis involving the large joints of the lower limb, as it is in these cases that excision proves a failure—the older the patient, within reasonable limits, the greater the chance of success for amputation. I have had a number of exceptionally successful excisions, especially of the hip-joint where the local condition was very bad, but in all there has been a comparatively much better general condition. In surgery as well as in internal medicine, we should not lose sight of the fact that we have the patient as well as the local disease to treat, and to rid him of it *at once* is often the only remedy. I have never had a case die as the result of an amputation done for suppurative or tuberculous disease of bones and joints, but I have had two cases of death from exhaustive suppuration following excision of the hip-joint—just the kind of cases that ought to have been amputated and not excised. *Early* amputation following unsuccessful excisions of *all* the large joints will make more bread-winners and fewer paupers and funerals than all continued efforts at tinkering surgery. In looking up my hospital notes of comparatively recent date, I find seventeen major amputations for disease of bones and joints, among these three of the hip. Included in these cases is one

(No. 7) not properly belonging to the subject under consideration, but of much interest because of the pathological condition and the early fatal termination.

IMMANUEL HOSPITAL.

Case I. O. E., male, age 50 years. Extensive osteo-myelitis of right femur involving the knee-joint; contracted kidney; no amyloid disease. Amputation through upper third of thigh, April 6, 1891. Primary union. Left hospital June 2, 1891, with a good stump and improved in general health.

Case II. C. L. G., male, age 31 years. Osteo-myelitis of right femur and tibia; epithelioma of lower lip. Amputation through lower third of thigh, May 30, 1891; primary union. Epithelioma removed three weeks later. Left hospital well, August 8, 1891.

Case III. E. C., male, aged 31 years. Tuberculosis ankle-joint. Incision, curetting and drainage of joint, March 18, 1892. Neither the local or general condition being satisfactory, the leg was amputated several weeks later, and the patient left the hospital May 21 cured.

Case IV. W. H. W., male, aged 30 years. Tuberculosis of knee-joint. Amputation of thigh, junction of middle and lower thirds, March 24, 1892. Left hospital, April 30, cured.

Case V. W. P., male, aged 17 years. May 20, 1892, a secondary amputation of leg was done for necrosis of the bones of the stump, the first amputation having been done by another surgeon. Union

somewhat protracted by slight suppuration. Left hospital July 2d, well.

Case VI. J. G.L., male, aged 30. Tubercular osteo-arthritis of femur and knee-joint. Amputation through lower third of thigh, October 21. Left hospital cured, December 13, 1892. The stump was an excellent one, and the general condition much improved.

Case VII. J. J., female, aged 43 years. Right hand gangrenous, pathological amputation of several fingers. Arterio-venous aneurisms involving most of the vessels of the fore-arm and lower arm. Brachial artery much enlarged. Amputation of arm just below shoulder joint, December 16, 1892. No hemorrhage, no apparent shock. The woman left the table in excellent condition, and no apprehension at all was felt for her. Shortly after removal to the ward she developed symptoms of œdema of the lungs and died in one-half hour. Ether was the anæsthetic and she had taken it well. Post-mortem examination showed œdema of lungs, especially on right side.

Case VIII. B. R., male, aged 32 years. Osteo-arthritis of femur and knee-joint. Amputation lower third thigh, December 19, 1892. Primary union. Left hospital, January 12, 1893, cured.

Case IX. A. F., female, aged 52 years. Recurrent sarcoma of lower end of femur. Amputation hip-joint January 5, 1893. Primary union only in part. Left hospital with wound entirely closed, February 16, 1893.

Case X. J. M., male, aged 37 years. Necrosis of the bones of the leg the result

of an old ununited compound fracture of the leg, septicæmia. Amputation point of election below knee-joint, February 14, 1893. Left hospital March 24, 1893, cured.

Case XI. R. E. N., male, aged 54 years. Perforating ulcer of the foot with gangrene due to the trophic change. Syme's amputation at ankle-joint at patient's urgent request to try and save heel, March 8, 1893. Flap sloughed and the leg was amputated upper third, April 10, 1893. Left hospital with good stump, May 21, 1893. There was a commencing perforating ulcer of the other foot but this improved greatly under rest and fomentations of sodium salicylate. The disease in this case was due to an arterio-sclerosis.

Case XII. B. D. W., male, aged 46 years. Necrosis of lower third of thigh involving knee-joint. Disease had been in existence thirty years. Amputation of lower third thigh May 2, 1893. Left hospital May 21st, cured.

Case XIII. J. L. A., male, aged 33 years. Tuberculosis knee-joint. Amputation June 1, 1893. Left hospital cured, June 17. This joint might have been excised, but patient demanded amputation.

Case XIV. F. W., male, aged 21 years. Tuberculosis of hip-joint. High dislocation of upper end of femur. Limb flexed, adducted, rotated inward and firmly fixed. Seven inches shortening, many sinuses: general condition fair for the lesion. Amputation at hip June 1st. Rapid union and improvement in general condition, up and walking on crutches in two weeks.

CLARKSON HOSPITAL.

Case XV. G. S., male, aged 21 years. Had excised knee-joint for deformity, the result of an old tuberculosis. When union was apparently quite firm he developed an acute fulminating tuberculosis of ankle-joint of same limb. Thigh was amputated lower third, January 13, 1892. Primary union. Left hospital in four weeks, well.

Case XVI. L. K., male, aged 12 years. Tubercular osteo-myelitis of tibia and involvement of ankle joint. Sub-periosteal removal of the tibia with spooning and drainage of ankle-joint December 8, 1892. The boy not doing well, the thigh was amputated January 6, 1893. Primary union and recovery.

DOUGLAS COUNTY HOSPITAL.

Case XVII. E. R., male, aged 24 years. Tuberculosis of hip-joint. An unsuccessful excision of the hip had been made by another surgeon some months before, and the young man was in a most deplorable, emaciated condition with a large bed sore, but with a remarkably good pulse, and a relatively low temperature. He had also a good appetite. Amputation at hip October 15, 1892. Recovery, gaining so as to quite double in weight. I never saw the case after his recovery, but am informed that about five months after the operation he died of an acute nephritis. This was a case in which, had an amputation been done instead of excision or immediately after its failure, the recovery might possibly have been permanent.

If by extensive operations upon bones and joints we succeed in eradicating all disease, but leave our patients with useless limbs, it were surely better in these days of mechanical ingenuity that amputation had been the operation of election, and some one of the manufacturers of artificial limbs consulted. The number of poor unfortunates who suffer continuously, seeking relief in one hospital, then at another, can be realized only by an acquaintance with such institutional work in large cities. And when many of them finally die, or get relief through amputation, the amount of unnecessary suffering cannot be estimated. I for one would rather amputate many limbs which possibly might have been saved as more or less useful, than lose a single life by a lack of appreciation of the proper remedy. A timid or too cautious general rarely wins a permanent victory.

In my amputations of the thigh and leg, modern technique, simplified as much as consistent with safety is employed.

The Esmarch bandage is never used, the limb being elevated for a short time and then constricted by a broad elastic bandage, applied well above the line intended for section of the bone. The flaps, antero-posterior, usually made of skin and fascia, and the muscles and bone (in the thigh) so divided that the bone forms the apex of a cone, the edges of the skin being a kind of irregular base with the anterior flap the longer, and both being so fashioned as to approximate well below the median line, and without tension. As near absolute hæmostasis as possible is aimed at. Am-

putations done in this manner are never followed by adhesion of skin to bone, and there is no excuse for buried cat-gut suture of the muscles, whose revival or continuance I have recently noticed advocated. A drainage tube is I believe, as in many cases of abdominal surgery, more often useful than otherwise. Amputation of the leg is done as nearly like that of the thigh as the anatomical differences admit. Care being taken to saw off the upper half or more of the sawn end of the tibia at an angle of about 45 degrees, and then with the bone forceps trim the surface and edges smooth and with a periosteal flap covering this, there can be no possible irritation to the skin flap; the fibula is always sawn about one inch shorter than the tibia. All circular amputations are, I think, bad, as it is impossible to carry the knife to bevel the edge of the flap so that accurate coaptation can be made, there being always more or less fatty tissue pouting out between the sutures. Muscular spasm is prevented, and rest and coaptation of the deep surfaces of the flaps obtained by applying the bandage. Commencing with a number of circular turns from above down and applied snug over the rather heavy dressing, there is no fear of interference with the circulation if the dressings are plentiful and the pressure uniform.

My hip-joint amputations were done by the mixed Guthrie antero-posterior flap method, and it is entirely satisfactory. Practically in any justifiable hip-joint amputation the control of hemorrhage is of

more importance than all else put together, and this I did by the Jordon Lloyd method, and in all cases where the upper end of the femur is not dislocated high up upon the ilium, I believe it is as good as any; at least in my two first cases it answered admirably, there being practically no bleeding. In my last case the recent method of Senn should have been used; Wyeth's would have been inapplicable, as in such cases, without first freeing the end of the femur, proper compression can not be made upon the branches of the internal iliac vessels.

In all but one (Case XIII) of the cases above outlined, I believe the amputations done were not only justifiable but demanded. They were all of the major amputations done for disease by me in hospital practice during the period indicated. The three hip-joint amputations are the limit of my experience in this operation; but of the thigh, leg, arm and fore-arm it has been that of a surgeon in active practice covering a period of twelve years, and I believe this experience allows me to express myself as I have.



